

TRI-PARTY AGREEMENT

Change Notice Number TPA-CN- 586	TPA CHANGE NOTICE FORM	Date: 09/10/2013
Document Number, Title, and Revision: DOE/RL-2013-36 100-KR-4 Groundwater Operable Unit Well Installation Sampling and Analysis Plan, Rev. 0		Date Document Last Issued: 07/23/2013
Originator: Jane V. Borghese		Phone: 373-3809
Description of Change: Table 4-1 Change Control is revised to give detail on analytical method substitution and the action needed for approval.		
<p> <u>B.L. Charboneau</u> and <u>C. Guzzetti</u> DOE EPA agree that the proposed change modifies an approved workplan/document and will be processed in accordance with the Tri-Party Agreement Action Plan, Section 9.0, <i>Documentation and Records</i>, and not Chapter 12.0, <i>Changes to the Agreement</i>. </p> <p>Table 2-4 <i>Analytical Performance Requirements for Water Samples</i> of DOE/RL-2013-36, Rev. 0 is revised to include additional analytes.</p> <p>Table 4-1 <i>Change Control</i> of DOE/RL-2013-36, Rev. 0 is revised to specify that DOE/RL project manager approval is needed and deleted notification to regulator when substituting analytical methods that meet or exceed analytical performance requirements specified in section 2.2.2 of DOE/RL-2013-36, Rev. 0, and that a revision to the plan (or a TPA Change Notice, if appropriate) is needed when substituting an analytical method that does not meet the analytical requirements provided in section 2.2.2.</p> <p>Deleted text is indicated in strikeout, added text is denoted by <u>double underline</u>.</p> <p>Note: Pages 2-17, 2-18, 2-19, and 4-1 are affected by this change.</p>		
Justification and Impacts of Change: Table 2-4 revision states analytical requirements for constituents identified in addenda. Table 4-1 revision added text that indicates analyte can be analyzed by an alternate method as long as the method meets or exceeds requirements, clarifies that RL approval is required, and regulator notification is not.		
Approvals:		
<u>Brian Charboneau</u> DOE Project Manager	<u>9-10-2013</u> Date	<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved
<u>[Signature]</u> EPA Project Manager N/A	<u>9/10/13</u> Date	<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved
Ecology Project Manager	Date	<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved

Table 2-4. Analytical Performance Requirements for Water Samples

CAS	Analyte	Analytical Method ^a	EQL	Precision Requirement (%) ^b	Accuracy Requirement (%) ^b
Performance Requirements for Field Measurements					
—	Oxidation reduction potential	REDOX PROBE	N/A	— ^c	— ^c
—	pH measurement	PROBE	0.5 pH unit	— ^c	— ^c
—	Specific conductance	PROBE	1 µS/cm	— ^c	— ^c
—	Temperature	PROBE	--	— ^c	— ^c
—	Dissolved oxygen	PROBE	--	— ^c	— ^c
—	Turbidity	PROBE	0.1 NTU	— ^c	— ^c
18540-29-9	Hexavalent chromium (screening)	EPA 7196 by HACH kit			
Performance Requirements for Laboratory Measurements (Radiological)					
14762-75-5	Carbon-14	LSC - Carbon-14	5 pCi/L	±30	70-130
10098-97-2	Strontium-90	Strontium 89/90 – Sr-90	2 pCi/L	±30	70-130
10028-17-8	Tritium	LSC - Tritium (H-3)	400 pCi/L	±30	70-130
Performance Requirements for Laboratory Measurements (Nonradiological)					
==	<u>Alkalinity</u>	<u>2320 Alkalinity</u>	<u>5,000 µg/L</u>	<u>±20</u>	<u>80-120</u>
7440-36-0	Antimony	Trace – ICP (6010) or ICP/MS (6020 or 200.8)	5 µg/L	±20	80-120
7440-38-2	Arsenic	Trace – ICP (6010) or ICP/MS (6020 or 200.8)	2 µg/L ^d	±20	80-120
7440-39-3	Barium	EPA 6010 (ICP metal)	5 µg/L	±20	80-120
7440-41-7	Beryllium	Trace – ICP (6010) or ICP/MS (6020 or 200.8)	2 µg/L	±20	80-120
==	<u>Bicarbonate</u>	<u>2320 Alkalinity</u>	<u>5,000 µg/L</u>	<u>±20</u>	<u>80-120</u>

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CAS	Analyte	Analytical Method ^a	EQL	Precision Requirement (%) ^b	Accuracy Requirement (%) ^b
7440-43-9	Cadmium	Trace – ICP (6010) or ICP/MS (6020 or 200.8)	2 µg/L ^d	±20	80-120
<u>7440-70-2</u>	<u>Calcium</u>	<u>EPA 6010 (ICP metal)</u>	<u>1,000 µg/L</u>	<u>±20</u>	<u>80-120</u>
=	<u>Carbonate</u>	<u>2320 Alkalinity</u>	<u>5,000 µg/L</u>	<u>±20</u>	<u>80-120</u>
7440-47-3	Chromium	EPA 6010 (ICP metal)	10 µg/L	±20	80-120
7440-48-4	Cobalt	Trace – ICP (6010) or ICP/MS (6020 or 200.8)	2.6 µg/L	±20	80-120
7440-50-8	Copper	Trace – ICP (6010) or ICP/MS (6020 or 200.8)	8 µg/L	±20	80-120
18540-29-9	Hexavalent chromium	EPA 7196 ^d	10 µg/L	±20	80-120
7439-92-1	Lead	Trace – ICP (6010) or ICP/MS (6020 or 200.8)	2 µg/L	±20	80-120
<u>7439-95-4</u>	<u>Magnesium</u>	<u>EPA 6010 (ICP metal)</u>	<u>750 µg/L</u>	<u>±20</u>	<u>80-120</u>
7439-96-5	Manganese	EPA 6010 (ICP metal)	5 µg/L	±20	80-120
7439-97-6	Mercury	EPA 7470 or 200.8	0.5 µg/L ^e	±20	80-120
7440-02-0	Nickel	EPA 6010 (ICP metal)	40 µg/L	±20	80-120
<u>7440-09-7</u>	<u>Potassium</u>	<u>EPA 6010 (ICP metal)</u>	<u>4,000 µg/L</u>	<u>±20</u>	<u>80-120</u>
7782-49-2	Selenium	Trace – ICP (6010) or ICP/MS (6020 or 200.8)	4 µg/L	±20	80-120
<u>7440-23-5</u>	<u>Sodium</u>	<u>EPA 6010 (ICP metal)</u>	<u>500 µg/L</u>	<u>±20</u>	<u>80-120</u>
7440-28-0	Thallium	Trace – ICP (6010) or ICP/MS (6020 or 200.8)	2 µg/L ^e	±20	80-120
=	<u>Total Carbonate</u>	<u>2320 Alkalinity</u>	<u>5,000 µg/L</u>	<u>±20</u>	<u>80-120</u>
7440-61-1	Uranium	Total Uranium (chemical)	15 µg/L	±20	80-120
7440-62-2	Vanadium	EPA 6010 (ICP metal)	25 µg/L	±20	80-120

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CAS	Analyte	Analytical Method ^a	EQL	Precision Requirement (%) ^b	Accuracy Requirement (%) ^b
7440-66-6	Zinc	EPA 6010 (ICP metal)	10 µg/L	±20	80-120
75-35-4	1,1-Dichloroethene	EPA 8260 (VOCs)	2 µg/L ^c	±20	80-120
79-00-5	1,1,2-Trichloroethane	EPA 8260 (VOCs)	0.59 µg/L ^c	±20	80-120
71-43-2	Benzene	EPA 8260 (VOCs)	0.8 µg/L ^c	±20	80-120
56-23-5	Carbon tetrachloride	EPA 8260 (VOCs)	1 µg/L ^c	±20	80-120
67-66-3	Chloroform	EPA 8260 (VOCs)	5 µg/L	±20	80-120
79-01-6	Trichloroethene	EPA 8260 (VOCs)	1 µg/L ^c	±20	80-120
127-18-4	Tetrachloroethene	EPA 8260 (VOCs)	0.5 µg/L ^c	±20	80-120
75-01-4	Vinyl chloride	EPA 8260 (VOCs)	1 µg/L ^d	±20	80-120
16887-00-6	Chloride	EPA 300.0 (anions by IC)	400 µg/L	±20	80-120
16984-48-8	Fluoride	EPA 300.0 (anions by IC)	500 µg/L	±20	80-120
14797-55-8	Nitrate	EPA 300.0 (anions by IC)	250 µg/L	±20	80-120
14797-65-0	Nitrite	EPA 300.0 (anions by IC)	250 µg/L	±20	80-120
14808-79-8	Sulfate	EPA 300.0 (anions by IC)	550 µg/L	±20	80-120

Sources: 40 CFR 141.62, "National Primary Drinking Water Regulations," "Maximum Contaminant Levels for Inorganic Contaminants."

40 CFR 141.66, "National Primary Drinking Water Regulations," "Maximum Contaminant Levels for Radionuclides."

40 CFR 143.3, "National Secondary Drinking Water Regulations," "Secondary Maximum Contaminant Levels."

EPA, 2009, *National Recommended Water Quality Criteria*.

WAC 173-201A, "Water Quality Standards for Surface Waters of the State of Washington."

WAC 173-340-720, "Model Toxics Control Act—Cleanup," "Groundwater Cleanup Standards."

a. Equivalent methods may be substituted. For the three-digit EPA method, see EPA-600/4-79-020, *Methods for Chemical Analysis of Water and Wastes*. For the four-digit EPA methods, see SW-846, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, Third Edition; Final Update IV-B*. Tentatively identified compounds will be reported for Method 8260 (SW-846).

b. Accuracy criteria for associated batch matrix spike percent recoveries. Evaluation based on statistical control of laboratory control samples also is performed. Precision criteria for batch laboratory replicate matrix spike analyses or replicate sample analyses.

c. Field measurements have no specific accuracy quality control requirement except to perform checks to verify manufacturer's expected performance.

d. Hexavalent chromium analysis could be performed using a HACH® Test kit for screening purposes.

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e. Calculated cleanup goals are at or below established analytical methodology capabilities. The analytical detection limits will be used for working levels and will be periodically reviewed to establish if lower detection limit capabilities have become available.					
CAS	=	Chemical Abstracts Service	ICP	=	inductively coupled plasma
CCC	=	criterion continuous concentration	MS	=	mass spectrometry
EQL	=	estimated quantitation limit	N/A	=	not applicable
GEA	=	gamma energy analysis	NTU	=	nephelometric turbidity unit
IC	=	ion chromatography	VOC	=	volatile organic compound

4 Change Management

Changes to this SAP and addenda will be reviewed and approved by DOE and the lead regulatory agency prior to implementation. Table 4-1 defines the types of changes that may be made to the documents.

A revision to this document may be necessary after a certain number (e.g., 5) of TPA (Ecology et al., 1989) change notices, at a major change in sampling, or at the request of the regulatory agency.

Table 4-1. Change Control

Type of Change	Action	Documentation
Adding constituents, or increasing sampling, <u>or substituting an analytical method that meets or exceeds analytical performance requirements provided in section 2.2.2.</u>	DOE-RL Project Manager approval; notify regulator.	Project's schedule tracking system
Eliminating constituents, <u>or</u> wells, decreasing sampling, or a change in analytical method/ quantitation limit to one that does not meet the analytical performance requirements provided in section 2.2.2.	Revise sampling and analysis plan (or TPA Change Notice, if appropriate); obtain DOE and regulatory approval; distribute plan.	Letter report documenting changes or revised plan (or approved TPA Change Notice)
Well construction material or depth	DOE-RL Project Manager approval; notify regulator.	Project's schedule tracking system
Well type	Revise sampling and analysis plan (or TPA Change Notice, if appropriate); obtain DOE and regulatory approval; distribute plan.	Letter report documenting changes or revised plan (or approved TPA Change Notice)
DOE = U.S. Department of Energy		
DOE-RL = U.S. Department of Energy, Richland Operations Office		
TPA = Tri-Party Agreement (Ecology et al., 1989, <i>Hanford Federal Facility Agreement and Consent Order</i>)		